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EXAMINER

BOYER, RANDY

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/825,484
Filing Date: April 14, 2004
Appellant(s): DEN BOESTERT ET AL.

William E. Hickman
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 14 April 2008 appealing from the Office
Action mailed 4 October 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of the claims contained in the brief is substantially correct. However, Examiner notes that Appellant's arguments submitted with the Pre-Brief Conference Request filed 10 January 2008 were sufficient to overcome the previous rejections of claims 1-16 under 35 U.S.C. 103(a). Therefore the status of the claims is now:

(a) Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Moller (WO 01/10540 A2).

(b) Claims 3-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is substantially correct. Examiner notes that the principal limitation presently at issue in Appellant's claim 1 is: "wherein during the process, a feed pressure level at the feed side is maintained at least as large as a permeate level at the permeate side, so that the pressure difference is maintained at zero or greater" (see Appellant's claim 1). Examiner believes specific support for Appellant's claim 1 can be found in the specification at page 2, lines 1-19 and 28-35; and page 9, lines 17-25.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. However, Examiner has withdrawn the previous rejections of claims 1-16 under 35 U.S.C. 103(a) as unpatentable over Moller (WO 01/10540 A2) in view of Cederlof (WO 03/035803 A1). Thus, the only ground of rejection to be reviewed on appeal is:

"Whether claim 1 is anticipated by Moller (WO 01/10540 A2) under 35 U.S.C. 102(b)."

Grounds of Rejection Not Withdrawn and Not to be Reviewed on Appeal

Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Moller (WO 01/10540 A2). This claim is not being appealed (see Appellant's statements, brief at page 2 under "Status of Claims").

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

WO 01/10540 A2

MOLLER et al.

02-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Moller (WO 01/10540 A2).

3. With respect to claim 1, Moller discloses a process for separating contaminants (e.g. colour bodies or particle matter) from a fluid mixture using a membrane having a feed side and a permeate side, by contacting the mixture with the feed side of the membrane, wherein between the feed side and permeate side of the membrane a pressure difference is applied, thereby passing part of the mixture from the feed side to the permeate side and obtaining at the permeate side of the membrane a permeate having a reduced content of contaminants (see Moller, page 1, lines 2-7), and by removing the permeate from the permeate side of the membrane, wherein during

selected time intervals the removal of permeate from the permeate side of the membrane is stopped (see Moller, page 6, lines 9-13) so that the pressure difference over the membrane is substantially lowered (see Moller, page 4, lines 31-33, and page 5, lines 1-3), and wherein during the process, a feed pressure level at the feed side is maintained at least as large as a permeate pressure level at the permeate side so that the pressure difference is maintained at zero or greater (see Moller, page 4, lines 31-33; page 5, lines 1-3; and page 8, lines 15-18).

(10) Response to Argument

Appellant's argument on page 3

Appellant argues on page 3 of the brief that Appellant has developed a simpler process (relative to Moller) to maximize forward fluid flow from the retentate to the permeate without the use of backwashing.

In response to Appellant's argument, Examiner notes that the argument fails to comply with 37 CFR 1.111(b) because it amounts to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Appellant's argument on page 3

Appellant argues on page 3 of the brief that Moller does not teach the desirability of stopping the removal of the permeate during selected time intervals, so that the forward pressure differential from the retentate to the permeate is temporarily

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substantially lowered, while maintaining the pressure difference at zero or greater, as required by Appellant's claim 1.

In response to Appellant's argument, Examiner references Moller's disclosure at page 6, lines 9-14, wherein Moller provides:

*The preferred embodiment of the method according to the invention comprises the further steps of providing a flow resistance means such as a valve and **adapted for periodically reducing or stopping the flow of permeate through said permeate outlet, and activating said flow resistance means during said backwashing phase such that the flow of permeate through said permeate outlet is reduced or stopped.** Hereby it is avoided that the backwash permeate flow is diverted from the desired transmembrane flow path thereof (emphasis added).*

Furthermore, Moller discloses at page 4, lines 31-33, and page 5, lines 1-3:

*The configuration of the membrane and the flow paths of the permeate and the retentate **during backwashing** give rise to pressure losses in both the permeate and the retentate, and therefore **it is advantageous that the flow of permeate relative to the permeate facing surface of the membrane be facilitated such that said flow of permeate is such that is corresponds to the flow of retentate and the pressure of the permeate and the retentate correspond to each other to the highest degree possible** (emphases added).*

Therefore, if the pressure of the permeate and the retentate are to "correspond to each other to the highest degree possible" (i.e. they are to be substantially the same), it follows that the pressure differential from the retentate to the permeate is substantially lowered (i.e. ΔP across the membrane will be at or near zero).

Moreover, Moller discloses that during the backwashing or membrane cleaning phase, **"the pressure differential"** between the permeate and the retentate at [the] feed

*inlet and [the] retentate outlet **is maintained positive during** at least 60% of [the] period of time, preferably at least 70%, further preferably at least 80%, most preferably **at least 85% of [the] period of time**"* (see Moller, page 8, lines 15-18) (emphases added).

Thus, it is clear from the foregoing passages that Moller does in fact explicitly teach stopping the removal of the permeate during selected time intervals, so that the forward pressure differential from the retentate to the permeate is temporarily substantially lowered; and wherein during the process, a feed pressure level at the feed side is maintained at least as large as a permeate pressure level at the permeate side "so that the pressure difference is maintained at zero or greater."

Finally, Examiner notes that Moller also explains the advantage (or desirability) of operating a membrane separation process under such a control scheme to be that an efficient cleansing of the membrane can be achieved without the uncontrolled pressure oscillations and high backwashing pressures normally associated with other membrane separation control schemes, thereby reducing the risk of equipment failure and unacceptable vibrations over the membrane (see Moller, page 4, lines 16-20).

Appellant's arguments on page 4

Appellant's arguments on page 4 of the brief are considered moot inasmuch as they pertain to the previous rejections of claims 1-16 under 35 U.S.C. 103(a) which have already been withdrawn and are not the subject of the instant appeal.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Randy P. Boyer

/Randy P. Boyer/

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Acting SPE of Art Unit 1797

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